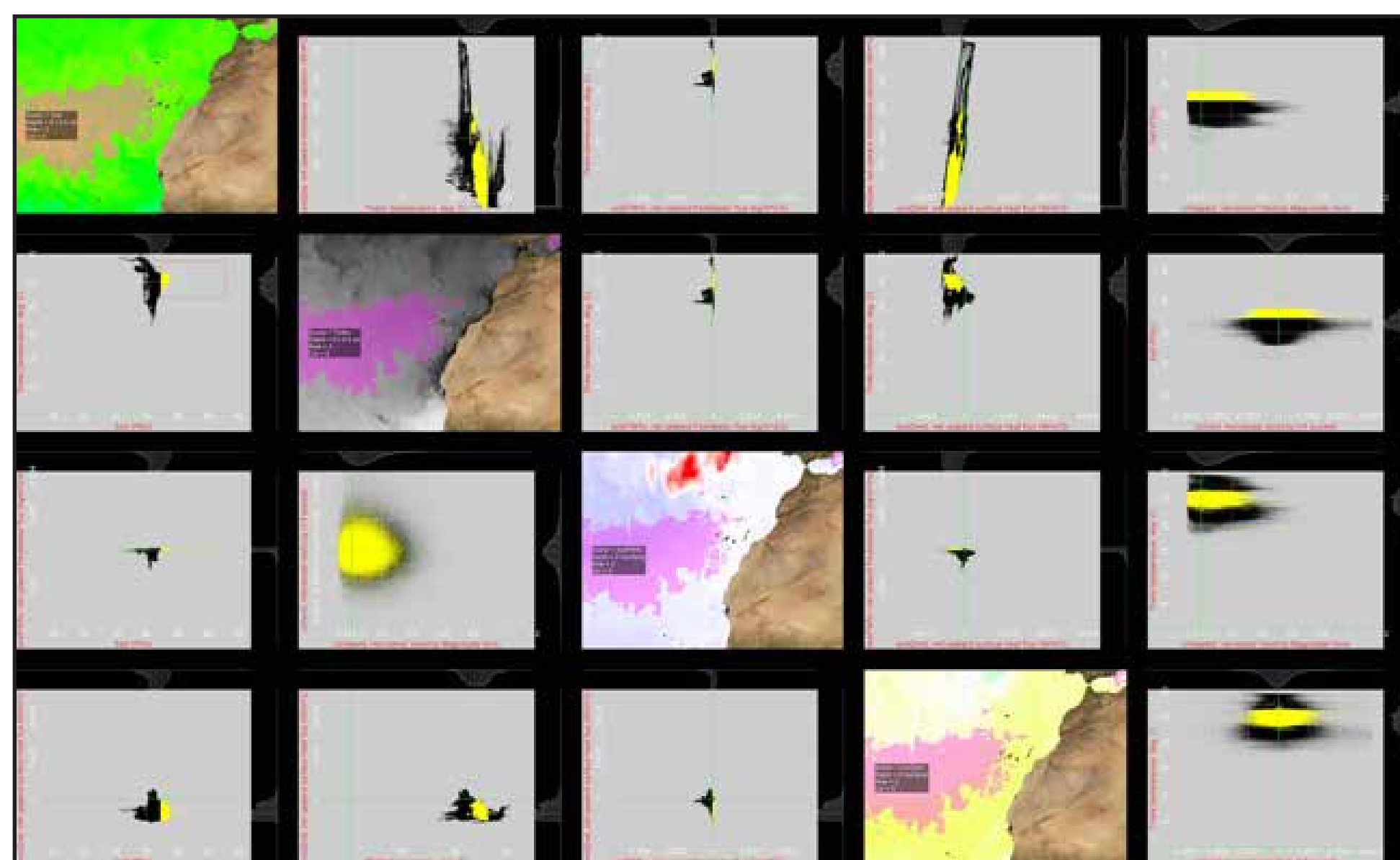


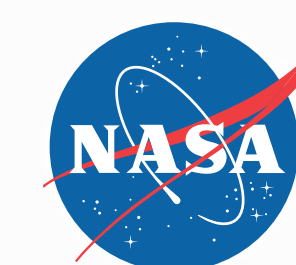


The hyperwall visualization system comprises 128 screens, each attached to a 20-core Intel Xeon Ivy Bridge node, for a peak overall processing power of 57 teraflops. The ECCO team's 1/48° global ocean simulation can be displayed at approximately one pixel per model horizontal grid cell, allowing scientists to simultaneously view global and detailed regional views of the simulation variables. *Christopher Henze, NASA/Ames; Christopher Hill, Massachusetts Institute of Technology*



In addition to global views of ocean variables, the NAS Division's visualization software allows detailed exploration of regional domains. For example, the time-evolving scatter plots and map views shown in this image allow scientists to explore ocean processes in the Eastern Atlantic, off the coast of North Africa. *David Ellsworth, Bron Nelson, NASA/Ames*

National Aeronautics and
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Scientists Explore Ocean Currents Through Petascale Simulations and Visualization

A team from the NASA Advanced Supercomputing (NAS) Division has developed a new interactive visualization tool that is being used by researchers from the Estimating the Circulation and Climate of the Ocean (ECCO) project to study the behavior of ocean currents. The new tool provides high-resolution views of the entire globe at once on the NAS hyperwall, allowing scientists to see details that they had missed in previous analyses of their 1/48° global ocean simulation, which was run on NASA's Pleiades supercomputer. Together with Pleiades, the high-capacity network bandwidth and data processing capabilities of the hyperwall provide one of the most powerful visualization systems in the world, enabling the ECCO scientists to discover previously unknown ocean features and their effect on the larger ocean system.



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